

Serial No. 09/973,068

IN THE SPECIFICATION:

Page 1, please insert the following heading before the first full paragraph:

Field of the Invention

This invention relates to a method for quickly configuring an automation module connected to a network conform with the TCP/IP protocol, particularly after replacement of a defective module. It also relates to an automation assembly comprising at least one automation equipment capable of using such a method. This invention may be applied to any automation assembly belonging to the domain of industrial process automation, building automation or to the domain of instrumentation/control automation for electrical distribution networks.

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Page 1, please insert the following heading before the second full paragraph:

Background

The term "automation module" in the following will denote any equipment provided with a processing unit and a communication interface with a TCP/IP network and used in an automation assembly, for example like an inputs/outputs module, a speed controller, a regulation device, a man/machine dialog terminal, a programmable logic controller or any specific module of a programmable logic controller or a numerical control. The term "automation equipment" as used in the following will denote a programmable logic controller, a numerical control, a computer based instrumentation/control station or any equipment provided with a processing unit and a communication interface with a TCP/IP network that can contain and execute an application program in an automation assembly.

Page 3, please insert the following heading before the first full paragraph:

Summary of the Invention

Therefore, the purpose of the invention is to propose a method to overcome the dependence on MAC addressing for a new automation module connected to a TCP/IP network. The invention must also make it possible to automatically assign an IP address to this new module and to automatically reload a data file into the module, possibly also containing parameters and programs. The proposed solution for fast and easy installation into a module and into automation equipment should be based on standard protocols in the Internet world such as the DHCP (Dynamic Host Configured Protocol) protocol described in document RFC 2131 and FTP (File Transfer protocol) or TFTP (Trivial File Transfer Protocol) protocols described in documents RFC 959 and RFC 1350. The DHCP protocol is used to allocate an IP address and transmit configuration data such as the address of a data server. The FTP and TFTP protocols are used to make file transfers in a TCP/IP network.

Page 5, please insert the following heading before the first full paragraph:

Brief Description of the Drawings

Other characteristics and advantages will be described in the detailed description given below with reference to an embodiment given as an example and represented by the attached drawings in which:

- figure 1 shows an architecture in which an automation module is connected through a TCP/IP network to automation equipment in accordance with the invention,

- figure 2 shows a variant of figure 1 with two items of automation equipment,

- figure 3 shows details of a configuration table contained in a DHCP server,

- figure 4 shows a representation of steps in the method of configuring an automation module.

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Description of the Preferred Embodiments

In the rest of this document, the term "IP addressing" will be considered to mean the set consisting of an IP address, a sub-network mask and a gateway address sufficient to completely define the address of the automation module on a TCP/IP network. Similarly, the term "location" of the data file of an automation module includes the set composed of the IP address of the FTP/TFTP server containing the data file considered, the access path to the data file in the FTP/TFTP server, and possibly also the connection key(s) to the FTP/TFTP server so that this data file can be accessed (for example user name and password).

Page 6, please replace the first full paragraph with the following:

The automation assembly shown in figure 1 includes an automation module 10 comprising a processing unit 12 connected to a network interface 11 and information storage means 15. The module 10 is connected to the TCP/IP network 5 through the network interface 11. It is capable of executing a DHCP client 13 and a FTP or TFTP agent called an FTP/TFTP agent 14, in its processing unit 12. The final user is unaffected by the choice between the FTP protocol and the TFTP protocol, since the functions used in the invention are essentially read file queries ("READ/GET") and write file queries ("WRITE/PUT"). The only difference is that the TFTP agent is more compact than the FTP agent and can therefore be more easily installed in the memory of a small automation module. The automation module 10 can memorize an application name 40 specific to the automation module 10, in its storage means ~~16~~15.